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Article abstract

This study investigates how native speakers of Acadian French evaluate the accentedness of loanwords entering their language from English. 83 university students, who were divided into three levels of proficiency in English, rated eight loanwords. The loans were chosen to represent a range of phonetic and social integration. Results show that listeners' proficiency in English is a significant factor in the rating: listeners with high English proficiency are more lenient with English pronunciations of a loanword than are low English proficient listeners. While significant individual differences were found in the ratings of the target loanwords, the relation between the accentedness rating of a loanword and its degree of social integration appears to be unclear.

ACCENTEDNESS RATINGS OF ENGLISH LOANWORDS BY ACADIAN FRENCH LISTENERS*

Phillip Harriott
Wladyslaw Cichocki

1. Introduction

When languages come into contact, there is often a transfer of words between them. These words are referred to as «loanwords» or «loans» in this study but are also known as «code switches», «borrowings» and «nonce borrowings» in the literature, cf. Myers-Scotton (1992); Poplack & Sankoff (1988). Loanwords not only «import» new concepts and terms into the host or recipient language (L1), they also bring with them from the source or donor language (L2) their original pronunciation. Over time, there is a process of phonological integration by which a loanword's pronunciation changes so that it more closely resembles the sound patterns of L1. The present research explores the question of how members of the L1 speech community evaluate the accentedness of loanwords which are undergoing integration.

Researchers generally agree on the stages in the integration process, cf. Grosjean (1982); Haugen (1969); van Coetsem (1988); Weinreich (1968). The initial users of a loan into L1 are typically the most bilingual members of a speech community. Because these individuals are familiar with the word's original sounds, they retain an L2 (or approximately L2) pronunciation. If the word spreads to those with less L2 ability and monolingual members of the community, unfamiliar sounds from L2 may be replaced by those from L1. There are, however, many cases

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in which loans resist complete phonological integration into L1, cf. Poplack, Sankoff & Miller (1988).

A number of factors shape a loan's pronunciation. One is the speaker's proficiency in the donor language. Speakers with high L2 ability tend to maintain the original L2 pronunciation in loans, whereas those with less L2 ability pronounce loans in an L1 manner, cf. Haugen (1969); Mougeon, Beniak & Valois (1985). A hypothesis by Haugen (1969) about the age of learning of the L2 claims that the earlier speakers learn L2 the more they will use an L2 pronunciation; however, this hypothesis was not substantiated in empirical testing by Poplack & Sankoff (1984). Another factor is the social integration of the loanword, that is, its use and importance within a speech community. Poplack & Sankoff (1984) demonstrate that the more often a loan is used for a concept in L1, the more phonologically integrated it becomes. A third factor is the sociopsychological profile of the speaker. Inoue (1992) reports that extroverted Japanese speakers are likely to pronounce loanwords from several European languages with an unmarked Japanese pitch accent while introverted subjects use a marked prosodic pattern. Finally, there is the prestige of L2. If L1 speakers regard L2 as prestigious the L2 pronunciation of a loan may be retained, cf. Weinreich (1968). If speakers have a high regard for L1 they may hold a puristic denial of a foreign sounding loan and the loan will undergo phonetic change, cf. Goudailler (1977).

While the above mentioned studies demonstrate that there is wide interest in the production aspects of the phonological integration process, a review of the literature turns up very little sociolinguistic information about how the members of a speech community evaluate the sound transformations in loanwords. An interesting exception is an observation by Haugen (1969, pp. 68-69) who notes that loans with high levels of phonological integration are considered to be not only native-sounding but also of host language origin. This suggests that the more frequently L2 sounds are used in L1, the less conscious L1 listeners become of their foreignness.

One area of research which bears directly on the study of the evaluation of loanword pronunciation is foreign accent perception. Studies have demonstrated that listeners are highly sensitive to divergences from the phonetic norms of their native language, cf. Flege (1984). While foreign accentedness ratings are not always stable, it has been shown that they depend on the context of the listening test, cf. Flege & Fletcher (1992), as well as on listener traits such as whether they are

monolingual or bilingual, cf. Johansson (1973), or whether they have linguistics training or not, cf. Brennan & Brennan (1981); Thompson (1991).

Studies of accent perception also provide experimental procedures that can be readily adapted to the study of language contact. These research techniques, which focus on listener reactions, have been widely used by sociolinguists, for example, Ryan, Carranza & Moffie (1977); van Bezooijen & van Hout (1985), in both monolingual and bilingual settings, and they form the empirical basis of our study.

Other studies of perception by bilinguals of their two languages suggest that being bilingual may entail a change in the use of acoustic information. Using voice onset stimuli Caramazza & al. (1973) study phoneme boundary shifts and find that French-English bilinguals' perceptions differ from those of French and English monolinguals. Furthermore, Elman, Diel & Buchwald (1977) note that strong bilinguals have different crossover points from moderate and weak bilinguals. Thus, degree of bilingualism plays a role in perception.

The aim of the present research is to investigate how members of an Acadian French community who have different proficiencies in English rate the accentedness of English loanwords. An important investigation by Mackey (1970, 1976) notes the presence of a continuum of English loanwords in Acadian French and establishes measures of their social integration. In a more recent study titled «Moitié anglais, moitié français?», Flikeid (1989) outlines the degree to which English-origin words are being introduced into the Nova Scotia varieties of Acadian French and studies sociolinguistic factors associated with the frequency of occurrence of this feature among native speakers. In addition, it has been shown that there are important regional differences in Acadian French with respect to degree and type of loanwords found in the maritime vocabulary, cf. Cichocki, Babitch & Péronnet (1992). Acadian French thus offers an interesting laboratory in which to address issues of loanword integration.

On the basis of our review of the studies of loanword production and foreign accent perception, we propose to relate accentedness ratings to two factors: the donor language proficiency of the listener and the degree of loanword integration. In focussing on listeners' L2 proficiency we are interested in relative sensitivity to divergences in pronunciation from Acadian French and in the leniency with which these evaluations are made. Second, we investigate whether loanwords with higher

social integration into Acadian French will be rated as having less accentedness than will words with a lower integration.

2. Method

2.1 Subjects

A total of 83 students from the Université de Moncton at Shippagan participated in the listening experiment. All the subjects were native speakers of Acadian French and were raised in the Acadian Peninsula region of northeastern New Brunswick. The majority of subjects (67 of the 83) were female.

The subjects were divided into groups on the basis of their proficiency in English. This proficiency was established by a self-report questionnaire which asked the subjects to rate their abilities (in English) in speaking, oral comprehension, reading and writing on a scale from 1 (poor) to 5 (strong). The replies were quantified and analysed with Dual Scaling (Nishisato 1980), and three groups of subjects were identified: a strong or high (H) proficiency group with strong proficiencies in the four areas, a mid (M) group with average to moderately strong proficiencies, and a weak or low (L) group with weak to relatively weak proficiencies. The sizes of the three groups were 20 (in the H group), 29 (M) and 34 (L), and reflect the fact that many francophones in the region have less than strong proficiencies in English.

Grosjean (1982) and others have pointed out that there are problems linked with proficiency tests based on self-reports. There is, of course, no doubt that a questionnaire cannot provide the same kind of indepth information about a speech community and its members as say participant observation. (This was not possible in the present study.) Nevertheless, it has been shown that a high correlation exists between language choices obtained from subjects by the self-report method and their actual language choices as observed by a participant observer researcher, cf. Gal (1979). Indeed, Macnamara (1967) considers that validity is quite high in the case of questions which focus on subjects' language use in the home.

Even though one may question the accuracy and depth of the picture of linguistic behaviour which is captured by self-reports, the results are useful. Sociolinguistic studies, cf. Mougeon & Beniak (1991); Poplack, Sankoff & Miller

(1988), have shown that factors such as degree of bilingualism (especially degree of individual bilingualism) and degree of language use are significant in explaining language change and variation in language contact communities.

2.2 Materials

Stimuli for the experiment consisted of eight loanwords which have varying degrees of integration into Acadian French. The words were chosen from lists given in Mackey's (1970) study of the integration of English loanwords into Acadian French. Mackey established a probability of integration index, which measures the relative frequency with which subjects thought of a loanword when asked to give all of the words that they associate with a particular domain. The loanwords and their indices are given in Table 1.

Table 1
List of target loanwords, Mackey's integration index, on a scale from "0" (low integration) to "1" (high), and subjective frequency index on a scale from "1" (high frequency) to "4" (low).

target loanword	Mackey's integration index	subjective frequency index
bowling	.097	1.57
fridge	.113	1.85
truck	.209	1.19
napkin	.265	1.29
basketball	.349	1.33
firestation	.400	3.52
manager	.575	2.62
pickle	.722	1.33

Because Mackey's study was carried out over twenty years before our study, we decided to obtain a more recent measure of integration. In the absence of current word frequency lists for Acadian French, we conducted a survey to obtain subjective frequency ratings for the eight target loanwords. This approach was chosen because it has been reported that subjective estimates of word frequencies correlate well (in

the order of 0.85 to 0.90) with observed word frequencies, cf. Segui, Mehler, Frauenfelder & Morton (1982). Twenty one bilingual Acadian speakers from the Acadian Peninsula area rated the target words (as well as a number of distractors) on scales from very frequent to very infrequent. These ratings were averaged over the subjects and are given in Table 1.

The Pearson correlation coefficient for the association between Mackey's integration index and our subjective frequency index is weak, $r = 0.217$ (one might expect a strong correlation near $r = -1.00$). There may be several reasons for this. One is the difference in approach. Whereas Mackey's method was indirect – his subjects were asked to provide words that they associated with a particular domain – our survey asked for a direct evaluation of specific words. Also, there is a time lag of over twenty years between the two studies: the integration of loans may well have changed over that period. Relevant for our purposes is the fact that in terms of both indices the target words represent a wide range of degree of integration.

The target words were recorded by two francophones, both from the Acadian peninsula. The words were read in isolation as well as in context; the isolation reading was used on the stimulus tape. One speaker had a relatively high number of English variants in her spoken French, and we refer to her readings as the E version; the other speaker had few English variants, which we refer to as the F version. The phonetic transcriptions of both E and F versions are given in Table 2.

2.3 Procedure

The 83 subjects listened to a total of 25 items. These included the F and E versions of each of the eight target words as well as nine distractors which were produced by a native anglophone and a native francophone speaker. The words appeared in random order on the test tape, and the order of presentation was the same for all subjects. For four of the target words the F version was presented before the E version, for the other four target items the opposite order of presentation was used.

Listeners rated each target loanword on a scale from 1 (very French-sounding) to 5 (very English-sounding). Specifically, listeners were asked to rate each word on the basis of how it sounds, and not on their impressions of the personalities of the

speakers. Both oral and written instructions for the listening task were given in French.

Table 2

Phonetic transcriptions of target loanwords in both F and E versions and the average ratings for each version. Ratings are on a scale from "1" (most French-sounding) to "5" (most English-sounding).

target loanword	average F rating	F version	average E rating	E version	(E-F) rating difference
fridge	2.26	[fridʒ]	4.46	[fʁidʒ]	2.20
basketball	2.41	[bæski?bɔ:l]	4.11	[bæskit?bɔt]	1.70
napkin	2.90	[næpk ^h ɪn]	3.71	[næpk ^h ɪn]	0.81
pickle	2.92	[pikœ:l]	4.37	[pɪk ^h ət]	1.45
bowling	2.93	[bo:lɪŋ]	4.64	[bɔlɪŋ]	1.71
firestation	3.31	[fajəstéʃən]	4.83	[fájəstéjʃən]	1.52
manager	3.49	[mænedʒœ:r]	4.60	[mænidʒə:r]	1.11
truck	3.65	[trʌk]	4.93	[tʁʌk]	1.28

3. Results

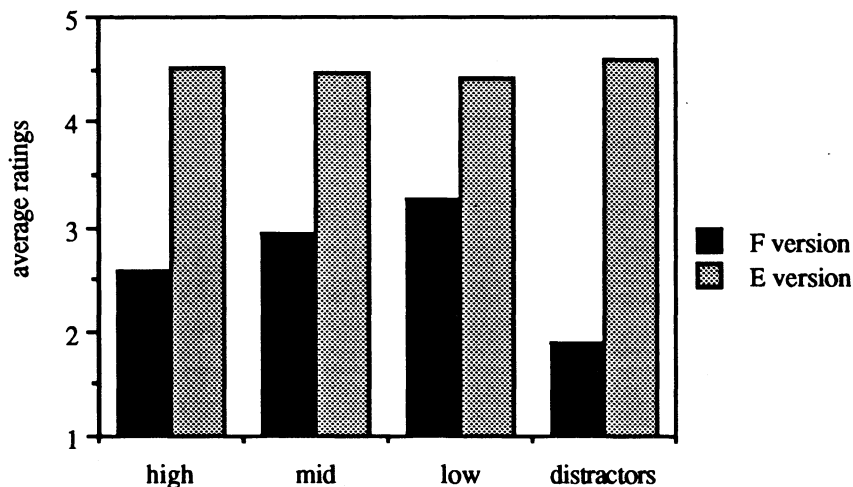
The mean ratings for the words are presented in Table 2. The table also displays the average difference between the ratings of the F and E versions. It is clear that listeners distinguished between the two versions; F versions received ratings from 2.26 to 3.65 and E versions from 3.71 to 4.93. However, the words were not rated categorically as English-sounding or French-sounding but along a continuum. Furthermore, the differences between F and E ratings are not uniform across the eight target loanwords.

One concern of this study was the relation between the continuum of ratings and the degree of integration of the words. Pearson correlation coefficients for Mackey's probability of integration index were $r = 0.271$ with F versions and

$r = -0.047$ with E versions; for the subjective frequency measures these coefficients were $r = 0.318$ with F versions and $r = 0.445$ with E versions. Examination of scatterplots showed no regular non-linear relationships. Thus, there is at best a weak relationship between the degree of integration of a word and its phonetic rating as given by the listeners.

The second major concern was the relationship between the listeners' ratings of the words and their proficiency in English. Figure 1 graphs the average ratings for both F and E versions for the three proficiency groups. The graph shows marked differences between the two versions: E versions are rated the same by the three groups; F versions receive different ratings: H proficiency listeners rate the target words as more French-sounding while the L proficiency listeners rate them as more English-sounding.

Figure 1
Average ratings for each listener proficiency group



Two separate two-factor-with-repeated-measure ANOVAs confirm these observations concerning inter-listener-group differences. The E versions showed no significant differences among listener groups ($F(2,80) = 0.357$, $p < .701$) although there were differences among some of the words ($F(7,560) = 21.681$, $p < .0001$). For the F versions both effects were significant: among groups ($F(2,80) = 5.899$, $p < .004$) and among words ($F(7,560) = 19.34$, $p < .0001$). In neither case were there significant listener group by word interactions.

Figure 1 also represents the average ratings for the French and English distractors. Compared with the target items the distractors received ratings which were more categorical: French distractors averaged 1.917, English distractors 4.524. No statistically significant differences among listener groups were found: for French distractors the average ratings were 1.825 (H proficiency group), 1.893 (M) and 1.992 (L); for English distractors the ratings were 4.588 (H), 4.603 (M) and 4.419 (L).

Further statistical tests were done for individual loanwords: the difference between F and E ratings was the dependent variable and listener proficiency group was the independent variable. Significant differences between listener groups were noted for *pickle* ($p < .009$) and *firestation* ($p < .05$); trends showed up for *fridge* ($p < .09$) and *manager* ($p < .10$); no significant differences occurred for *bowling* ($p < .12$), *napkin* ($p < .13$), *truck* ($p < .16$), and *basketball* ($p < .37$). In each case the same pattern showed up: the H group had the largest differences in ratings between F and E versions, that is, they rated the F versions as the most French-sounding; the L group had the smallest differences between the F and E versions, rating the F versions as very English-sounding; the M group had ratings between those of the other two groups. These statistics show that the H group gave what we can consider as the most lenient ratings while the L group gave the most severe ratings. These results point to other interesting inter-word differences which we discuss below.

The data were also studied for any evidence of an ordering effect, depending on which version of a target item appeared first on the tape. One might expect that the rating given to a particular version of a target loanword is influenced by a previously heard version of that loanword. Average ratings are suggestive in this respect: F versions which occurred after their E equivalent were treated as more French-sounding than F versions which occurred before their E equivalent – 2.85 vs. 3.12. A similar result was obtained for E versions: E versions which occurred after the F equivalent were treated as more English-sounding than E versions which occurred before their F equivalent – 4.50 vs. 4.41. However, neither difference is statistically significant. It appears that order of presentation of the target item has no effect on accentedness rating, at least in the context of individual loans presented in random order.

4. Discussion

The results show that the Acadian French listeners make fine distinctions among the pronunciations of the target English loanwords. They distinguish not only between the F and E versions of the loans but they also make distinctions among the loans given in a particular version. This study investigated whether and how these distinctions can be explained by the English proficiency of the listeners as well as by features of the individual words.

The most important finding of the study is the significant effect of listeners' proficiency in English. The more proficient subjects are in English, the more likely they are to rate loanwords as native (French-sounding); listeners with low English proficiency will rate the same loans as more English-sounding. This result parallels the relationship between perception and familiarity with a language noted in a second language acquisition study by Thompson (1991). Thompson finds that having more experience with languages makes listeners more reliable in their evaluation of foreign accent in L1 and more tolerant of variations from the L1 pronunciation. He states that this ability to tolerate L2 sounds in L1 stems from having learned to ignore regularly occurring «deviations» from L1 pronunciation. In this respect, a high L2 proficient listener may still detect L2 features in a loan which is being integrated into L1 but would rate it as more native sounding than would a less L2 proficient listener.

For the less English proficient listeners, the perception of loans containing both donor and host language sounds is more difficult. These listeners need to take into account differences between the two languages: sounds from the donor language which are dissimilar from the host are considered «foreign» until integrated or recast into a different shape. In our study it is likely that the listeners who were less proficient in English focussed on the English sound features when rating the loans.

In the wider context of the study of loanword phonology and language contact, our study offers evidence of two opposing forces that act on loanwords. On the one hand, there is resistance to new loans from speakers who have low English proficiency, and this may effectively block the loan's linguistic integration. Because a loan may be hard to comprehend (or pronounce), these speakers may reject the loan. On the other hand, for speakers who are more English proficient, such differences pose no obstacle, and the word can be appropriated into the host

language with less difficulty. Van Coetsem (1988, p. 112) refers to these forces as «initiating» the borrowing process – and thus bringing the word into the language – and as «controlling» the word's integration.

The weak associations of the word ratings with the two indices of integration provide an ambiguous result. It is possible to argue that the two integration factors may not have been rigorously studied due to limits in the experiment. Mackey's probability of integration indices show no relation with the word ratings. However, the age of his figures may not reflect the current social integration of the loans in the Acadian community. The subjective word frequencies, which are current, show only a weak association with the word ratings. While these are not actually observed frequencies, it would be necessary to undertake a major survey to obtain such figures.

It is also possible to argue that the absence of strong correlations for the integration factors has more to do with the type of loans used in the survey than with the integration figures themselves. Grosjean (1988) studied factors in the recognition of loanwords («guest words» in his terminology) by bilingual French-English listeners. In certain situations, the guest word was recognised by its phonological sequence, or by its membership in the L1 vocabulary. If the borrowed item sounded similar to an existing L1 word, a homologue, then the deciding factors were the word's pronunciation, its predominant frequency in L1 and L2, and whether the meaning of the borrowed item or its L1 homologue best fit the semantic context of the test sentence. Frequency is an important factor only in cases where there is «ambiguity» as to whether a word comes from L1 or L2 due to an L1 homophonic counterpart. In our study, the loans did not have such counterparts, and were probably easily identified as English in origin. Consequently, frequency did not display a noteworthy correlation with the word ratings.

This may be the most reasonable explanation for the individual word differences noted in Section 3. We found that the loans were divided into three groups: *pickle* and *firestation*, which have significant differences among the listener groups; *fridge* and *manager*, which show trends; and *bowling*, *napkin*, *truck* and *basketball*, which show no significant differences. In terms of Mackey's integration index the first group shows the highest integration, followed by the second group with a mid level of integration, and the third group with a low level of integration. This would suggest that loans such as *pickle* and *firestation* are already integrated

into Acadian French. However, in such a case we would not expect differences between high and low English proficiency speakers! We would expect there to be such differences in the low integration group, but this is not the case. With respect to the subjective frequency index there is no obvious correlation with the three word groups. At best, then, it appears that frequency has no clear relationship with loanword accentedness.

Among the other factors which may have played a role in the ratings provided by the Acadian listeners are the phonetic features of the target words. While the nature of our experimental design does not permit us to propose a hierarchical inventory of such features, the word ratings and the phonetic transcriptions given in Table 2 are suggestive in this respect. First, the most regular distinction between F and E versions is prosodic: in all of the F versions main stress falls on the word-final syllable, following a French pattern. Main stress in the E versions follows an English pattern and falls on various positions in the word, although the E versions also have a secondary accent on the word-final syllable. Among the segmental differences, the dark, velar /l/ and the reduced vowels seem to be the features most strongly associated with an English-like pronunciation.

5. Conclusion

This study showed that evaluations by Acadian French listeners of the accentedness of English loanwords are related to the listeners' ability in English. Listeners with high English (L2) proficiency are more lenient towards (and accepting of) L2 pronunciations of a loanword than are low L2 proficient listeners. This suggests that L2 proficiency has a dual role in loanword integration: on the one hand it promotes integration of the loan into the L1 lexicon and, on the other, it acts as a control of this integration. The role of word frequency in loanword accentedness rating appears to be weak at best, although this factor needs to be examined in more detail.

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References

- BRENNAN, E. M. & J. S. BRENNAN (1981) «Accent scaling and language attitudes: Reactions to Mexican American English speech», *Language and Speech*, vol. 24, pp. 207-221.
- CARAMAZZA, A., G. YENI-KOMSHIAN, E. ZURIF & E. CARBONE (1973) «The acquisition of a new phonological contrast: The case of stop consonants in French-English bilinguals», *Journal of the Acoustical Society of America*, vol. 54, pp. 421-428.
- CICHOCKI, W., R. M. BABITCH & L. PÉRONNET (1992) «Geographical variation in the Acadian French maritime lexicon», *Journal of the Canadian Association of Applied Linguistics*, vol. 14, pp. 43-55.
- ELMAN, J. L., R. L. DIEHL & S. E. BUCHWALD (1977) «Perceptual switching in bilinguals», *Journal of the Acoustical Society of America*, vol. 62, pp. 971-974.
- FLEGE, J. E. (1984) «The detection of French accent by American listeners», *Journal of the Acoustical Society of America*, vol. 76, pp. 692-707.
- FLEGE, J. E. & K. L. FLETCHER (1992) «Talker and listener effects on degree of perceived foreign accent», *Journal of the Acoustical Society of America*, vol. 91, pp. 370-389.
- FLIKEID, K. (1989) «Moitié anglais, moitié français? Emprunts et alternance de langues dans les communautés acadiennes de la Nouvelle Écosse», *Revue québécoise de linguistique théorique et appliquée*, vol. 8, p. 177-228.
- GAL, S. (1979) *Language Shift: Social Determinants of Linguistic Change in Bilingual Austria*, New York, Academic Press.
- GOUDAILLER, J.-P. (1977) «À nouveau les puristes contre la langue», *La linguistique*, vol. 13, pp. 85-98.
- GROSJEAN, F. (1982) *Life with Two Languages: An Introduction to Bilingualism*, Cambridge MA, Harvard University Press.
- GROSJEAN, F. (1988) «Exploring the recognition of guest words in bilingual speech», *Language and Cognitive Processes*, vol. 3, pp. 233-274.
- HARRIOTT, P. (1992) Listener evaluations of phonological integration: Factors which influence the perception of loanwords, unpublished MA thesis, University of New Brunswick, Fredericton, Canada.
- HAUGEN, E. (1969) *The Norwegian language in North America*, Philadelphia, University of Pennsylvania Press.
- INOUE, F. (1992) «Word-accent change in progress in Japanese: A multivariate analysis of sociolinguistic groups», Paper presented at the XVth International Congress of Linguists, Québec, to appear in the *Proceedings*.

- JOHANSSON, S. (1973) «Swedish and English phonemes: A perceptual study», *Swedish-English Contrastive Studies. Report N° 5*, Sweden, Lund University. Education Resource Information Center ERIC Documents ED 145 701.
- MACKEY, W.F. (1970) *Interference, integration and the synchronic fallacy*, Québec, Centre international de recherche sur le bilinguisme.
- MACKEY, W.F. (1976) *Bilinguisme et contact des langues*, Paris, Éditions Klincksieck.
- MACNAMARA, J. (1967) «The bilingual's linguistic performance – a psychological overview», *Journal of Social Issues*, vol. 23, pp. 58-77.
- MOUGEON, R. & E. BENIAK (1991) *Linguistic consequences of language contact: The case of Ontarian French*, Oxford, Oxford University Press.
- MOUGEON, R., E. BENIAK & D. VALOIS (1985) *Contact des langues et changement linguistique: étude sociolinguistique du français parlé à Welland (Ontario)*, Québec, Centre international de recherche sur le bilinguisme.
- MYERS-SCOTTON, C. (1992) «Comparing codeswitching and borrowing», *Journal of Multilingual and Multicultural Development*, vol. 13, pp. 19-39.
- NISHISATO, S. (1980) *Analysis of categorical data: Dual scaling and its applications*, Toronto, University of Toronto.
- POPLACK, S. & D. SANKOFF (1984) «Borrowing: the synchrony of integration», *Linguistics*, vol. 22, pp. 99-135.
- POPLACK, S. & D. SANKOFF (1988) «Code-Switching», in U. Ammon & al. (éd.), *Sociolinguistics. An International Handbook of the Science of Language and Society*, Berlin, Walter de Gruyter, pp. 1174-1180.
- POPLACK, S., D. SANKOFF & C. MILLER (1988) «The social correlates and linguistic processes of lexical borrowing and assimilation», *Linguistics*, vol. 26, pp. 47-04.
- RYAN, E. L., M. A. CARRANZA & R. W. MOFFIE (1977) «Reactions toward varying degrees of accentedness in the speech of Spanish-English bilinguals», *Language and Speech*, vol. 20, pp. 267-273.
- SEGUI, J., J. MEHLER, U. FRAUENFELDER & J. MORTON (1982) «The word frequency effect and lexical access», *Neuropsychologia*, vol. 20, pp. 615-627.
- THOMPSON, I. (1991) «Foreign accents revisited: The English pronunciation of Russian immigrants», *Language Learning*, vol. 41, pp. 177-204.
- van BEZOOIJEN, R. & R. van HOUT (1985) «Accentedness ratings and phonological variables as measures of variation in pronunciation», *Language and Speech*, vol. 28, pp. 129-142.
- van COETSEM, F. (1988) *Loan phonology and the two transfer types in language contact*, Dordrecht, Foris.
- WEINREICH, U. (1968) *Languages in contact*, La Haye, Mouton.